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Submitted Jan 16, 2012; accepted Apr 5, 2012.

DISCUSSION

Dr Hazim J. Safi (*Houston, Tex*). I thank Adam Beck, MD, for sending me this manuscript well in advance. The authors have developed a prediction model for 30-day and 1-year mortality after thoracic endovascular aortic repair (TEVAR). It is an important contribution to our vascular literature. Most surgeons make this assessment (implicitly) when deciding on how to manage patients with aneurysms. I congratulate the authors for quantifying the relationship between the risk factors and mortality rate. However, I wish that the authors had conducted an analysis to evaluate the effect of known statin use on the hazard ratio. This might provide some assistance in interpreting the otherwise paradoxical findings. I have three questions:

1. Why didn't the authors use the effective glomerular filtration rate instead of the creatinine level in predicting an adverse outcome?
2. Can the authors elaborate on the incidence of neurological deficit, stroke, paraplegia or paraparesis, and its impact on mortality rate?
3. Can the authors establish the need for adjunct procedures preoperatively?

I thank the authors for their beautifully written manuscript and advances in our understanding of the risk factors that are present in TEVAR.

Dr Adam W. Beck. Thank you, Dr Safi. With regard to your first question regarding using the estimated glomerular filtration rate (eGFR) rather than creatinine, we have preoperative creatinine in our database, so that was the value that we used for the analysis. However, I do agree that eGFR would be a more accurate description of the patients' renal function. We used a fairly strict definition for renal insufficiency, with a creatinine of ≥1.8, and perhaps using

eGFR might allow us to find an association with renal function and 1-year mortality.

In terms of the neurological complications of TEVAR and how they affect outcome after surgery, this project was meant to look at preoperative predictors of mortality, so we did not include operative complications in the model. Spinal cord ischemia after TEVAR is an academic interest to our group, and we have looked at the effect that it has on mortality. Our rate of spinal cord ischemia is about 9%, with a permanent deficit in 4%, and having that complication after TEVAR profoundly negatively affects survival.

Regarding whether we can predict the need for adjunctive procedures preoperatively, the answer is yes and no. I think we can predict the majority of the adjunctive procedures, such as carotid subclavian bypass, endo, or open conduits, as well as chimneys performed to create proximal and distal landing zones. However, there were some adjunctive procedures that were performed based on intraoperative decision making.